DOCTORAL SCHOOL OF WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

SUPERVISOR/TEAM/ DECLARING/CONDUCTING COURSE: Prof. of WUST, Tomasz Trapko, PhD, Eng.
DEPARTMENT: Civil Engineering Department
SCIENTIFIC DISCIPLINE: Civil Engineering and Transport

COURSE CARD

Course name in Polish: Metodyka badań konstrukcji budowlanych
Course name in English: Methodology of building structures testing
Course language: Polish / ~~English~~*
University-wide general course type*:
The course is intended for all PhD students: YES / NO
~~1) BASIC COURSE~~
2) SPECIALIST COURSE
~~3) SEMINAR~~
~~4) HUMANISTIC COURSE~~
~~5) LANGUAGE~~

Subject code: ILQ100026W
* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)	30	-	-	-
Grading	Exam	Exam	Oral presentation	Exam, inspection, evaluation classes
Number of ECTS points	**0**			

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES
1. Student has a knowledge about strength of materials and general mechanics.
2. Student has a knowledge about load capacity of engineering structures.

COURSE OBJECTIVES
C1. Learn the planning and organizing rules of experimental testing of materials, structural elements and building structures.
C2. Learn the methods and specificity of testing of materials, structural elements and building structures.
C3. Develop the skills of planning and organizing of scientific investigations.
C4. Preparation for performing unsupervised scientific investigations and results interpretation.
C4. Foundation of skills of efficient cooperation in scientific team including interdisciplinary scientific investigations.

PROGRAM CONTENTS

Form of classes – lecture (Lec)		Number of hours
Lec1	Introduction. Discussion on course program and rules of passing.	2
Lec2	Planning rules of investigative experiment – literature studies.	2
Lec3	Planning rules of investigative experiment – definition of aim, scope and object of experimental studies.	2
Lec4	Model investigations, half-natural and natural scale approach.	2
Lec5	Measuring devices and apparatus for experimental studies – Loading-measuring devices.	2

Lec6	Measuring devices and apparatus for experimental studies – displacements gauges. Measuring approaches.	2
Lec7	Measuring devices and apparatus for experimental studies – strain gauges. Introduction	2
Lec8	Strain gauges measurements – Rules of strain gauges arrangement and results interpretation.	2
Lec9	Strain gauges measurements – Rules of strain gauges arrangement and results interpretation.	2
Lec10	Measurements with application of elasto-optic coating and fibre optic gauges.	2
Lec11	Non-destructive testing of materials, elements and building structures.	2
Lec12	Selection of investigative material, results interpretation.	2
Lec13	Practice – rules of investigative elements preparation.	2
Lec14	Practice – displacements measurements.	2
Lec15	Practice – strains measurements.	2
	Total hours:	**30**

TEACHING TOOLS USED
N1. Lecture: informative lecture, problem lecture, multimedia presentation N2. Laboratory: practical exercises covering the subject matter of the lecture.

ACHIEVED SUBJECT LEARNING OUTCOMES		
Type of learning outcome	Code of learning outcome	Assessment of learning outcome
Knowledge	P8U_W	Student competently quotes other authors in articles published and prepared for publication in peer-reviewed scientific journals, peer-reviewed materials from international scientific conferences, and in book editions preceding the preparation of a doctoral dissertation.
Knowledge	P8S_WG	Student has knowledge at an advanced level of discipline and subject matter relevant to the field of research carried out, including the most recent research findings and scientific achievements.
Skills	P8S_UW	Student has scientific and technological skills relevant to methods and methodology of conducting scientific research and critical evaluation of the results obtained. Student is able to create and conduct independent research, including outside the educational institution. Student is able to creatively interpret the results obtained and to search for their application. Student is prepared to intensify research with commercial potential.
Skills	P8S_UO	Student is able to establish and undertake scientific cooperation in research teams, including international research teams

		Student is able to initiate and conduct discussions on research topics, results obtained and their interpretation.
Social competence	P8S_KKK	Student is aware of the role of cooperation, including international cooperation, in the process of research and analysis of the results obtained.

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] Kmita A., Kubiak J.: Badanie konstrukcji betonowych – Przewodnik do ćwiczeń laboratoryjnych, Wydawnictwo Politechniki Wrocławskiej, Wrocław 1993.
[2] Gosowski B, Kubica E.: Badania laboratoryjne z konstrukcji metalowych, Wrocław 2007.
[3] Nagrodzka-Godycka K.: Badanie właściwości betonu i żelbetu w warunkach laboratoryjnych, Arkady, Warszawa 1999.

SECONDARY LITERATURE:

[1] E-Jurnals: Library of Wrocław University of Science and Technology

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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